Crono

AMBULATORY INFUSION PUMP

CANE

MEDICAL TECHNOLOGY

USER GUIDE

Crono

USER GUIDE

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FOREWORD

CAUTION: US Federal law restricts this device for sale by or on order of a physician.

This manual is written with the aim of informing the user of this pump. The instructions and details given here are fundamental for the correct and safe use of this device.

Please take time to read all the information before using the pump and moreover keep this guide in a safe place for future reference.

NOTE

The manufacturer only considers itself responsible for the safety and reliable working of this pump, provided that it is used in accordance with the current instructions for use.

The manufacturer declines all responsibility towards the purchaser and any third party for any damage to the pump caused by tampering, improper use, modifications and/or reparations by unauthorised personnel.

INTENDED USE

The ambulatory infusion pump Crono has been designed for subcutaneous drug infusions. Canè S.r.l. declines all responsibility for the administration of drugs and solutions and/or methods of drug infusions other than those described in this manual.

USER ASSISTANCE INFORMATION

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INTRA PUMP INFUSION SYSTEMS
920 Minters Chapel Road, Suite 200
Grapevine, Texas 76051
Tel: 866-211-7867
Fax: 630-845-2768
Email: info@intrapump.com

PUMP DESCRIPTION

Canè S.r.l. - a company specialized in the production of ambulatory pumps since 1972 - has developed a new generation of compact pumps: Crono which is a perfect combination of high technology and innovative design.

Infusion pumps using normal commercial syringes are bulky and cumbersome and thus difficult to use in the true sense of "ambulatory". This can have a negative impact on patient compliance and treatment goals.

A special syringe, an integral part of Crono, provides an efficient reduction of overall pump size. Whether day or night infusion is required, Crono offers more conveniences and advantages than other bulkier, heavier pumps.

Patients who have been following subcutaneous infusion therapy for a long time often experience difficulties in absorbing the drug subcutaneously. This may lead to catheter occlusion with infusion interruption.

Crono has a unique mechanism which responds to occlusion and provides an infusion thrust up to three times higher than conventional pumps. Normal infusion is resumed when catheter occlusion has been eliminated.

In order to provide steady infusion and continuous drug absorption, Crono infuses the fluid volume to be administered in pulses of .022 ml. These pulses are spread evenly over the time set for completing the infusion.

FACTORY SETTINGS

The following features were set at the factory but can be re-programmed:

Syringe size	20 ml
Audible signal for end infusion	AL.0 (Non active)
Delivery time	10 hours
Key-pad lock level	Lo,0 (key-pad unlocked)
Number of infusions	0

TECHNICAL FEATURES

Dimensions	77x48x29 mm (3x1.9x1.1 inch).
Weight	115 g (battery included).
Battery	3 Volt type 123 A lithium battery.
Syringes	Dedicated with 10 or 20 ml capacity.
Volume administration	Drug volume can be programmed from 1 to 20 ml.
Delivery time	Programmable from 30 minutes to 99 hours, in 15 minutes steps.
Accuracy	+/- 2%.
Available occlusion pressure	4,5 bar +/-1.
Data storage	Programmable data are automatically stored in the pump's memory; the data are not lost when the battery is removed.
Safety circuits	To control the regular working of the device, alarming in the event of anomaly and displaying error message.
Tamper resistant feature	Allows the pump to be "locked" by disambling the buttons.
Operating conditions	+10°C / +45 °C 30% / 75% RH 700 hPa / 1060 hPa
Storage conditions	-10°C / +60 °C 10% / 100% RH 500 hPa / 1060 hPa

STANDARD EQUIPMENT SUPPLIED

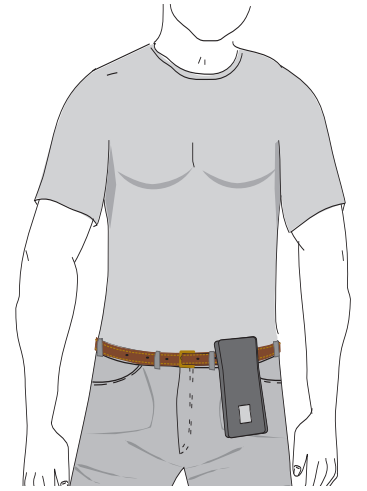
1. Ambulatory infusion pump
2. Pump case
3. Elastic belt
4. Collar strap
5. Fabric holder
6. 2 batteries (one already inserted in the pump)
7. Battery tool
8. User guide

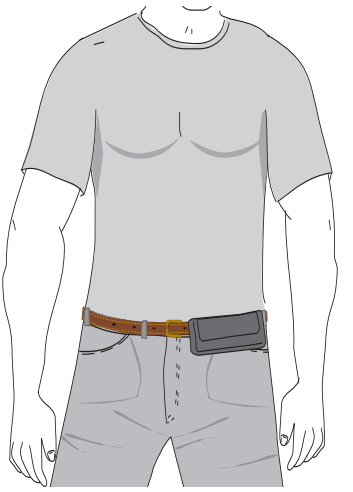
Fig.1

OPTIONAL ACCESSORIES

Optional accessories are available upon request:
1. Upright leather holder similar to a mobile telephone holder.
2. Horizontal leather holder similar to a spectacle case.

Fig.2

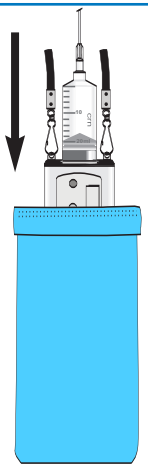




HOW TO USE THE STANDARD EQUIPMENT SUPPLIED

The following illustrations show how the pump and its accessories can be set up.

Fig.3



How to attach collar strap to the pump and the fabric holder

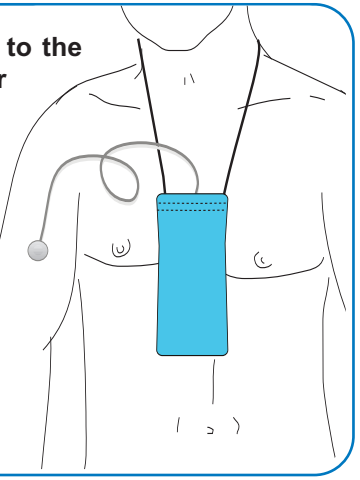
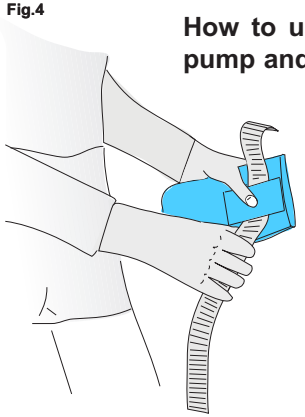
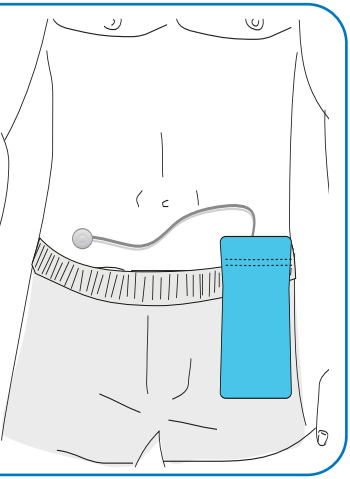


Fig.4

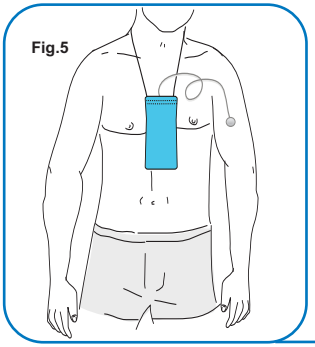


How to use elastic belt with pump and fabric holder



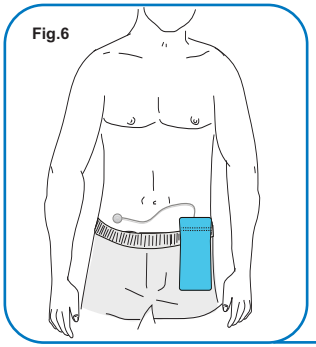
HOW TO WEAR THE PUMP

The following pictures show the different ways the pump can be worn.



WEARING THE PUMP AROUND THE NECK

Wearing the pump around the neck with collar strap and fabric holder

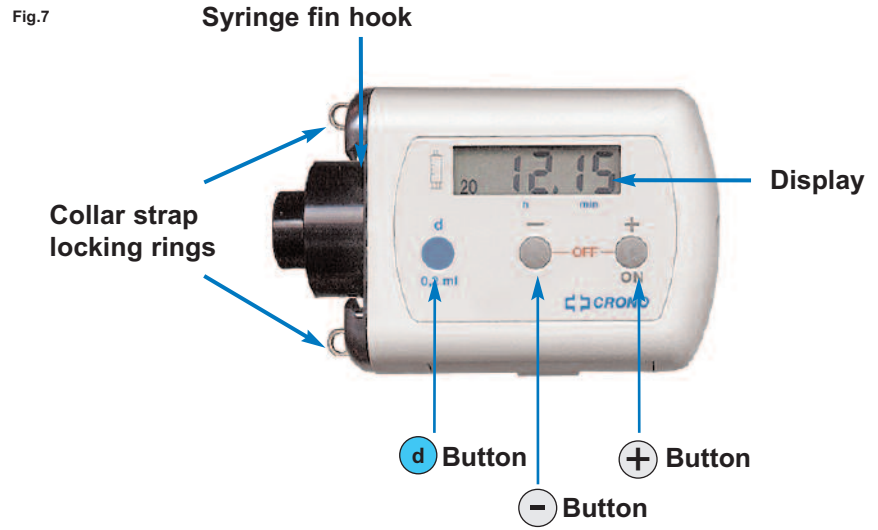


WEARING THE PUMP AT THE WAIST

Wearing the pump at the waist with elastic belt and fabric holder

PUMP PARTS

Fig.7



LIQUID CRYSTAL DISPLAY

This is a screen on the front of the pump displaying symbols which inform the patient of operations in progress as well as showing warnings and alarm messages.

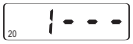
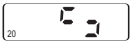
"Battery" symbol: appears when the battery is nearly expired (see the related paragraph, page 30)

"Drip" symbol: flashes when the device is on; it alternates with indication of hours and minutes

10 **"10 ml" symbol:** indicates the device has been programmed to use 10 ml (CRN 10) syringe

20 **"20 ml" symbol:** indicates the device has been programmed to use 20 ml (CRN 20) syringe

MAIN SCREEN INDICATIONS

	DELIVERY TIME
	PARTIAL VOLUME
	OFF INDICATION
	20 ML SYRINGE SELECTED
	END OF INFUSION AUDIBLE SIGNAL (ON)
	ERROR MESSAGE
	OCCLUSION
	BACKWARDS/FORWARDS MOVEMENTS OF THE PUMP PISTON
	END OF INFUSION
	LOW BATTERY
	BATTERY DISCHARGED
	DISPLAYING THE NUMBER OF INFUSIONS
	KEY-PAD UNLOCKED
	KEY-PAD LOCKED: LEVEL 1
	KEY-PAD LOCK SETTING

SYRINGE PARTS

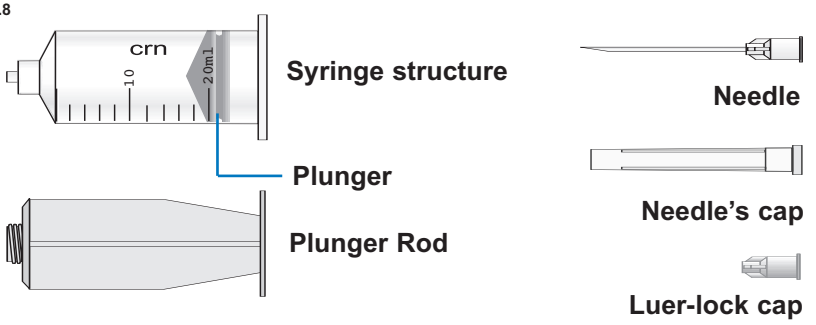
The Crono pump uses dedicated syringes which are available in two sizes:

- CRN® 10 ml CRONO® Syringe
- CRN® 20 ml CRONO® Syringe

The syringes are:

- Single use only
- To be used only if packaging is not damaged
- Pyrogen-free

Fig.8



LUER LOCK CAP FUNCTIONS

- Can be used after the syringe has been filled, in order to unscrew the plunger rod from the plunger with ease.
- To protect the drug in the syringe if infusion is not imminent.

Fig.9

Luer-Lock cap

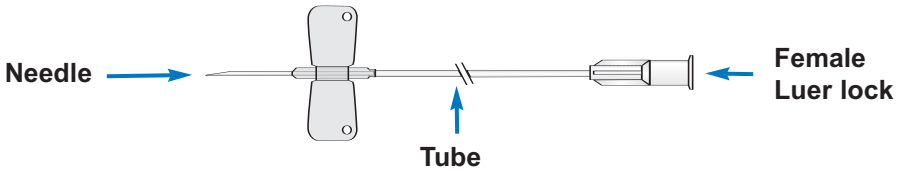
INFUSION SET

It is advisable to use infusion sets which have the following specification:

- Tube with internal diameter of limited dimensions (optimum 0.36 mm, maximum 0.6 mm);
- Length of the tube not exceeding 90 cm;
- Tube with dead space lower than 0.5 ml;
- Anti-kink tube.

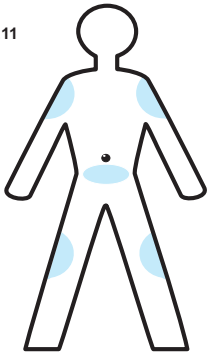
INFUSION SET PARTS

Fig.10



INFUSION SITES

Fig.11



Infusion sites can be any of the following:

- Anterior aspects of upper arm
- Anterior abdominal wall
- Anterior aspect of thighs

It is advisable to change infusion site after each drug administration in order to avoid skin irritation.

INFUSION PREPARATION

Before preparing the equipment for infusion, it is advisable to follow these precautions:

1 - Wash your hands
2 - Prepare a clean working area

SYRINGE PREPARATION

1. Put the supplied needle on the syringe with a clockwise rotation.

2. Fill up the syringe, aspirating the drug slowly to avoid disconnection between the rubber plunger and plunger rod. Verify the drug inside does not exeed 10 or 20 ml capacity.

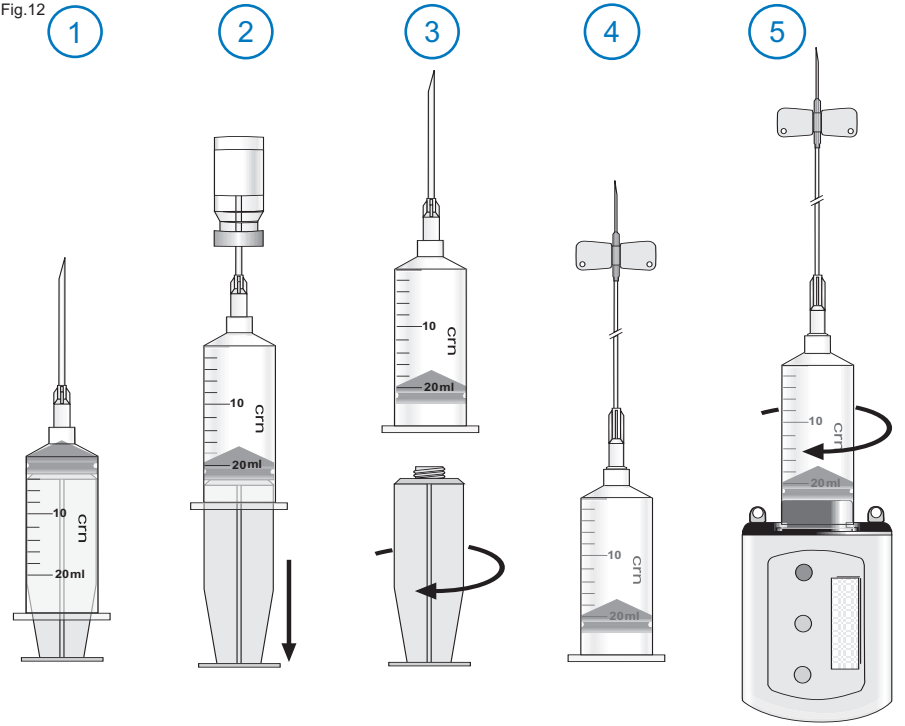
3. Unscrew the plunger with a brisk counter-clockwiser rotation.

4. Put the subcutaneous tubing on the syringe with a clockwise rotation.

5. Insert the syringe into the instrument with a 90° rotation, making sure to detect a “click” which indicates the syringes is locked into the pump.

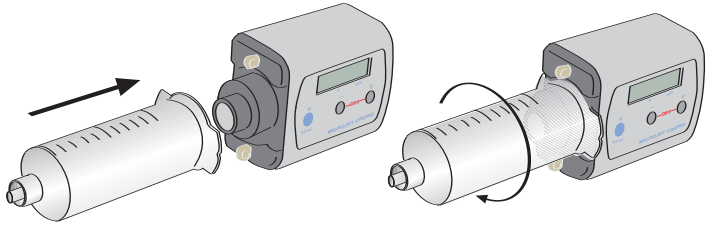
SYRINGE PREPARATION

Fig.12

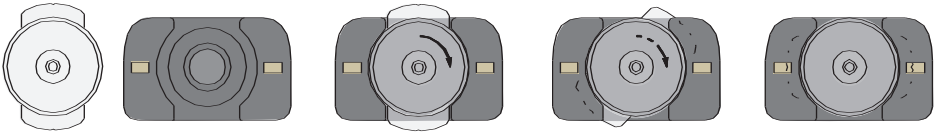


CONNECTION OF THE SYRINGE TO THE PUMP

Fig.13



Top view



WORKING INSTRUCTIONS

- Press the buttons with your finger-tips only, do not use sharp or pointed objects.

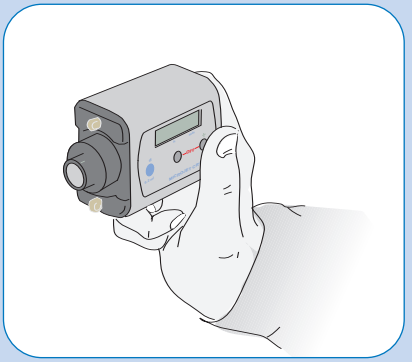
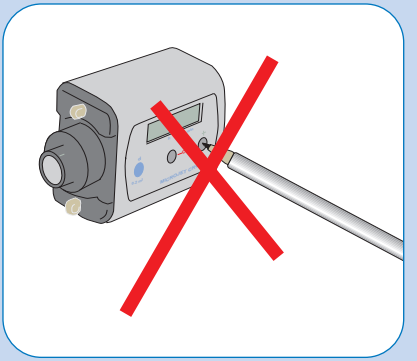


Fig.14



- **Time-controlled buttons:** keep buttons pressed for a few seconds to activate commands.
- Button activation is confirmed by a ticking sound, except in the phase of battery insertion.
- Command execution is confirmed by a brief audible signal.
- Before starting the infusion, check that the 10 ml or 20 ml syringe setting has been selected correctly.
- The pump is supplied with a battery already inserted.

PUMP ACTIVATION

During the device activation phase it is possible to select the following parameters:

- Syringe size (10 ml or 20 ml)
- End of infusion audible signal (ON or OFF)

The syringe size and the end of infusion signal can only be selected and/or changed immediately after battery insertion.
Device activation:

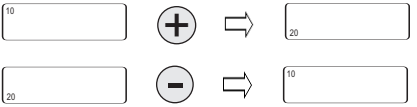
1. Remove, and then re-insert the battery

2. The pump will carry out a self-test, during which the display will show all readable symbols and emit audible signals

3. While syringe size symbol is flashing (the numbers “10“or “20”), you may select syringe sizes.
   Use the ⊖ or ⊕ buttons to make your selection.
   If, for example, the number “10” is flashing, press the ⊕ button and keep it pressed for a few seconds until the number “20” appears.

10 ml syringe

20 ml syringe



The information regarding the syringe size will always be shown on the display.

4. After syringe size selection, you may activate/deactivate an audible signal for end of infusion. While the display blinks, you may select to either have the audible signal or not by pressing the ⊖ or ⊕ buttons .

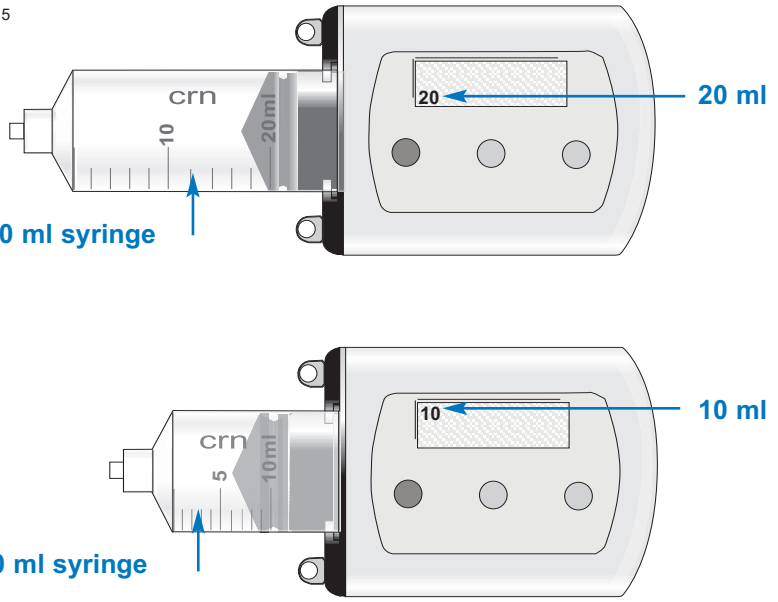
AL.1 Audible signal ON

AL.0 Audible signal OFF

5. After a few seconds, the pump automatically returns the pump piston to its starting position, then the screen displays OFF. OFF

The selected data are automatically stored in memory.

Fig.15



PROGRAMMING

- Delivery time
- Partial volume

PROGRAMMING THE DELIVERY TIME

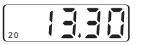
Delivery time can be programmed at the following rate:

- **10 ml syringe:** from 30 min to 99 hours, with 15 minutes steps
- **20 ml syringe:** from 1 to 99 hours, with 15 minutes steps

Program the delivery time proceeding as follows:

1. Switch on the pump by briefly pressing the ⊕ button.

2. The adjustment of delivery time (hours and minutes) either up or down from what is shown on the screen is accomplished by first pressing ⊕ until the current delivery time starts to flash. If you wish to increase the delivery time, you continue to press ⊕ until the desired time shows on the screen.If you wish to decrease the delivery time, press ⊖ until the desired delivery time appears on the screen.



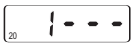
Continuous button pressure causes a rapid change of the delivery time. When buttons are not pushed for a five second period, the time is set and the display stops flashing.

3. To store the delivery time press the d and ⊕ buttons simultaneously, the device issues a sound signal and the indication on the screen disappears for a short while; this to confirm that data have been successfully stored.

PROGRAMMING PARTIAL SYRINGE VOLUME

If the therapy requires the use of a partially filled syringe, the infusion starting point of the pump piston can be stored into the pump's memory.
Proceed as follows:

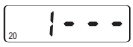
1. Press the d button: the pump piston will advance up to the position corresponding to the volume of drug to be infused.



2. Switch off the pump by pressing the − and + buttons. The screen will display OFF.

3. Press the d and + buttons simultaneously. The device will issue an audible signal and the screen will display the stored volume

4. At the end of the infusion the pump piston will return to the stored position.



5. The stored position can be changed by repeating the procedure above.

6. Any time the pump is switched on, the screen will display the cc stored volume.

7. Such setting will be maintained until the battery is removed.

SWITCHING ON THE DEVICE

By pressing ⊕ button, the screen will swiftly display the following order of sequence:

- Stored syringe volume given in cc (appears only if formerly stored)

- The instrument will emit a brief sound and show the delivery time (hours and minutes), with the blinking “drip” symbol separating hours from minutes.

The infusion time on the display decreases every 15 minutes.

PRIMING THE INFUSION SET

Before beginning the infusion, you must check whether the pump piston is in contact with the plunger. If this is not the case, move the piston forward by pressing button d.

Any time you press this button the pump piston moves forward with increments of 0.45 mm corresponding to 0.2 ml.

Continue this process until a few drops of the fluid to be infused come out of the needle.

WARNING

Make sure the infusion set is not connected to the patient during priming!

END OF INFUSION

If the acoustic signal is activated 10 minutes prior to the end of infusion, the device will emit a two second lasting intermittent signal.
The same signal will be repeated twice 5 minutes before the infusion ends.
At the end of infusion a continuous acoustic alert lasting a few seconds will be emitted. The screen will display the message END.

The pump piston will automatically return to its starting position. The screen will read OFF.

The pump piston reversal time is about:
- 5 minutes for 10 ml syringes
- 10 minutes for 20 ml syringes

STORING DATA

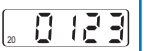
Information regarding syringe size, delivery time and number of infusions already administered will be automatically stored in the memory. Stored data are not lost even when battery is removed.

SWITCH OFF

Press the ⊖ and ⊕ buttons simultaneously to switch off the pump during the infusion. The display will show OFF.

READING THE NUMBER OF INFUSIONS

Keep the ⊖ button pressed for 8 seconds in OFF condition: the display will show the number of infusions already administered.



RE-SETTING THE NUMBER OF INFUSIONS

As each infusion is finished a record of this is automatically kept by the pump, even if the battery is removed.
Instructions on how to retrieve this information is on page 28.

However, there are some situations in which it is helpful to be able to re-set the number of infusions back to the factory setting of 0000 infusions.

1. With the pump switched OFF, press the ⊖ button until the number of infusions appear on the screen.

2. Without releasing the ⊖ button, press the d button.

3. The number of infusions will flash on the screen.

4. Release the d button.

5. In sequence press the ⊕ button , the ⊖ button and finally the d button for about 2 seconds each. (If the audio alarm is activated, there will be a “ticking” sound during each of these 2 second periods. When this sound stops, the button can be released).

6. The screen will show 0000 infusions if the procedure is done correctly.

The screen will show UNDO if the procedure is done incorrectly

REVERSAL OF PUMP PISTON

1. Total reversal

It is possible to interrupt the infusion already in progress and make the pump piston return to its starting position. Proceed in the following way:

a. Switch off the pump by pressing the ⊖ and ⊕ buttons simultaneously.

b. Press the d and ⊖ buttons, simultaneously. The display will show END.

c. The pump piston will return to its starting position.

2. Automatic reversal of pump piston at the END of infusion

When infusion ends you will read END on the display.

The pump piston will automatically return to its starting position, and the display will show OFF.

PISTON MOVEMENTS

When the pump piston has to move either backwards or forwards you will read a symbol on the display indicating this.

INFUSION SET OCCLUSION

When the infusion set occludes, Crono indicates the status of occlusion by emitting an audible acoustic alarm and a message on the display. Every two minutes the device attempts to advance the pump piston. When the occlusion is cleared and the

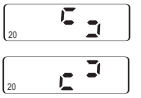
pump resumes regular delivery, the screen will alternate the occlusion warning message with the information regarding the delivery time.

TAMPER RESISTANT FEATURE

The tamper resistant feature allows the pump to be “locked” by disabling the buttons.
Putting the pump in the tamper resistant mode does not alter or impede any of the normal functions or alarms of the pump.It is designed to reduce the risk of inappropiate button pressing. IT IS RECOMMENDED THAT SMALL CHILDREN BE INSTRUCTED TO NOT TOUCH BUTTONS REGARDLESS OF WHETHER THIS FEATURE IS ACTIVATED OR NOT.

First of all, “Lo,0” message on the screen means that the pump is in normal, unlocked mode. “Lo,1” means that the pump is locked.

TO LOCK THE PUMP:

1. Turn the pump on and set the delivery time.
2. When you are satisfied that the pump is working properly,
3. Press the ⊖ button for about 7 seconds.
4. Will appear on the screen.

5. Without releasing the ⊖ button, press the ⊕ button.
6. “Lo,0” will appear on the screen.

7. Press ⊕ button and “Lo,1” will appear.

8. If you wish to leave the pump locked, simply stop pushing buttons.

9. The pump will resume operation in lock mode.

10. THE SYRINGE SIZE NUMBER WILL NOW FLASH ON THE SCREEN ,TO REMIND YOU THAT THE PUMP IS LOCKED

TO UN-LOCK THE PUMP
This procedure is similar to locking the pump.

1. Press the ⊖ button for about 7 seconds.

2. Will appear on the screen.

3. Without releasing the ⊖ button, press the ⊕ button.

4. “Lo,1” will appear on the screen.

5. Press ⊖ button and “Lo,0” will appear.

6. The syringe size will now show a normal steady number.

LOW BATTERY ALERT

The LOW BATTERY warning will appear on the screen to indicate that battery level is low. It is time to change the battery as soon as possible.
If the battery is not replaced soon after the screen warning, a subsequent infusion could be interrupted.

If the battery is allowed to fail completely, the screen will show the message “BATTERY DISCHARGED”. In such a situation the pump has stopped. The battery must be replaced immediately .

It is advisable to change the battery as soon as the “LOW BATTERY” symbol appears.

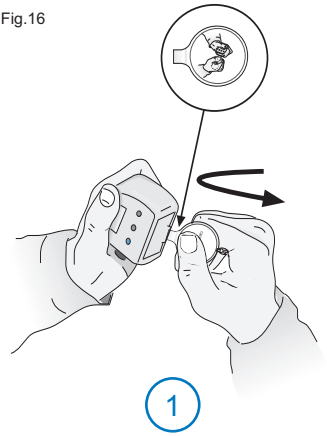
BATTERY REPLACEMENT

1. Open the battery compartment using the battery tool or a paper clip.
2. Pull out the cover.
3. Use the small ribbon strap (which lies under the battery) to facilitate the removal of the battery.
4. Remove the discharged battery and discard it properly.
5. Insert the new battery checking that it is correctly placed in accordance with polarity and that the ribbon strap is under the battery.
6. After having installed the battery, close the cover.

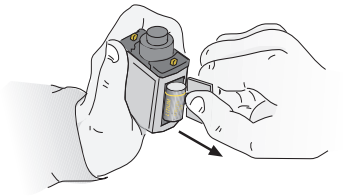
If the battery cannot be removed by pulling the strap, do not try to lever with an object or tool. Take the pump firmly in one hand and, as gently as possible, shake the battery out onto your other hand.

BATTERY REPLACEMENT

Fig.16



1



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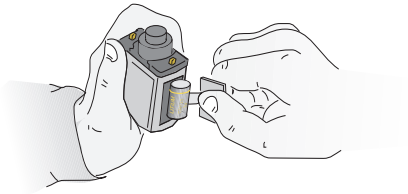

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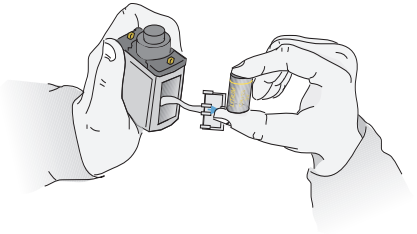

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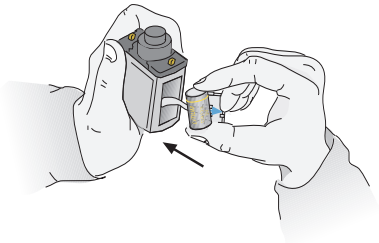
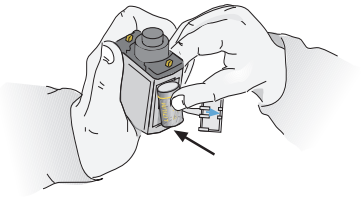


5



6

CAUTIONS

- Use only a lithium 3 Volt CR 123 A battery.
- Batteries other than this type may cause the pump to malfunction.
- Batteries of the above-mentioned type are readily available in camera stores and most pharmacies.
- Under average operating conditions, each battery should last about 150 infusions. Keep a spare battery in a convenient place.
- If the pump is not used for long periods of time, it highly recommended to remove the battery from the pump.
- Remove the pump before taking a bath or shower: the pump may be damaged upon contact with water. Should the pump accidentally come into contact with any liquid (drug solution, sweat, bed wetting) the pump must be checked by the manufacturer or a qualified personnel authorised by the manufacturer.
- If you suspect that liquid has penetrated into the pump (a leakage or spill), please contact the appropriate person within your specialist health care team or your authorized distributor for advice.
- The pump must be kept away from:
  - heating devices (radiators, oven rings, stoves);
  - direct sunlight;
  - high electromagnetic fields (magnets, loud-speakers, portable radio devices, cell phones);
  - ionogenic radiations;
  - supersonant devices
  - magnetic resonance devices (MRI)
- The pump does not need to be sterilized.
- Syringes, infusion set, needles, and all material used during the infusion process must be discarded properly.

MAINTENANCE AND CLEANING

The Crono pump requires no particular maintenance operation, owing to its technical features.

To clean the instrument, use a soft cloth slightly moistened with a mild detergent.

Avoid the risk of liquid penetration into the instrument.

In the event the instrument becomes wet, absorb the liquid with blotting-paper.

STORAGE

If the pump is not going to be used for a long period of time (more than 1 or 2 months), it is advisable to remove the battery, put it inside the device case and store it in a dry place.

USER ASSISTANCE INFORMATION

UNITED STATES:
INTRA PUMP INFUSION SYSTEMS
920 Minters Chapel Road, Suite 200
Grapevine, Texas 76051
Tel: 866-211-7867
Fax: 630-845-2768
Email: info@intrapump.com

MANUFACTURER'S GUARANTEE

With this consumer guarantee, Canè S.r.l. guarantees that this product is free from defects in materials and workmanship for a period of 2 (TWO) YEARS beginning from the date of purchase.

If during this period of guarantee the product proves defective due to improper materials or workmanship, Canè S.r.l. will without charge for labour or parts, repair or replace the defective parts upon the terms and conditions set out below.

Canè S.r.l. reserves the right to modify the characteristics or the model of the pump and accessories without obligation to make similar modifications to pumps and accessories previously manufactured or sold.

Conditions:

1. This guarantee will be granted only if the defect is brought to the attention of Canè S.r.l.

2. This guarantee will not be in effect if the pump and accessories have

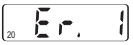
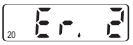
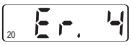
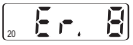
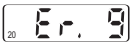
been damaged as a result of modifications or adjustments made without prior written consent from Canè S.r.l.

3. This guarantee will not apply if the type or serial number on the product has been altered, deleted, removed or made illegible.

4. This guarantee does not cover any of the following:
   - Periodic maintenance
   - Damage resulting from misuse, including but not limited to:
     - Failure to use the product for its normal purpose or in accordan ce with this user's guide;
     - Repair done by non-authorized Service Stations or Dealers, or the customer himself;
     - Accidental events, dropping, liquid infiltration.
   - Natural calamity, fraudulent or premeditated action

5. Once the warranty period has expired, Canè S.r.l. will provide the service debiting the costs of components being replaced, expenses of labour charges and freight charges.

ALARM MESSAGE

ALARM MESSAGE	DESCRIPTION	ACTION
	OPERATION NOT POSSIBLE	RE-CHECK MANUAL
	UNCORRECTED RESET	RE-START DEVICE
	CRITICAL CONDITION OF THE SECURITY SYSTEM	PRESS BUTTON ⊕
	IRREGULARITY OF THE MOTOR CIRCUIT	PRESS BUTTON ⊕
	MECHANICAL BLOCK DURING "END" PHASE CAUSED BY FOREIGN MATTER OBSTRUCTING THE PISTON'S REVERSAL	1. REMOVE THE CAUSE 2. RE-START DEVICE
	IRREGULARITY OF THE PUMP PISTON'S ADVANCEMENT	PRESS BUTTON ⊕
	OCCLUSION	PRESS BUTTON ⊕
	READING MEMORY ERROR (EEPROM)	RE-START DEVICE*
	ERROR WITHIN THE MOTOR PILOTING CIRCUIT	RE-START DEVICE

Alarm messages are accompanied by audible signals.
To re-start the device following an alarm message, remove the battery and wait least 15 seconds before re-inserting.

*Please note: if your pump shows Err8, and you subsequently re-start it, the programmed settings will revert to the factory settings (see page 8). Therefore, whenever this condition takes place, you must re-program the settings assigned by your doctor or PD nurse.

If the device will not re-start, contact your authorized distributor.

SUMMARY OF FUNCTIONS AND BUTTONS

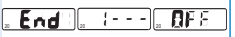
The follow brief instructions are by no means an alternative to reading the information supplied in this manual. The following tables are both a concise and quick reference with regard to pump use and its buttons.

Time control buttons: the buttons must be pressed for a few seconds if a command is to be carried out. This ensures that if the patient accidentally touches a button, no commands will be activiated.

INSERTING BATTERY PHASE

BUTTONS	PUMP ACTIVATION / SYRINGE SIZES AND END INFUSION SIGNAL	SCREEN
	The syringe sizes and the end infusion signal can only be selected and/or changed immediately following the battery insertion.	
	• The screen will show all symbols	
− / +	• Syringes Size setting (10 / 20 ml)	
	• Setting the acoustic signal of end infusion	
	• Piston self-adjust	
	• Pump switches OFF	

PUMP OFF

BUTTONS	PUMP SWITCH OFF / STORING OF PARTIAL SYRINGE VOLUME	SCREEN
d and − (depress simultaneously)	• Reversing of the pump piston to the start position	
d and + (depress simultaneously)	• Storing of the partial syringe volume	
− (depressed for 8 seconds)	• Reading of no. of infusions delivered	
	PUMP ON	
+	• Pump switches ON	

PUMP ON

BUTTONS	PROGRAMMING THE DELIVERY TIME / PRIME	SCREEN
− / +	• Decreasing or increasing of the delivery time	
d and + (depress simultaneously)	• Delivery time storing	
d	• Prime (0.2 ml)	
d and − (depress simultaneously)	• Pump piston return (partial)	
	PUMP OFF	
− and + (depress simultaneously)	• Pump switches OFF	

END OF INFUSION

	END OF INFUSION	SCREEN
	• End of infusion	
	• Piston automatic reversing	
	• Automatic switch OFF	

PUMP ICON TABLE

SN	**Pump serial number**
	Drip-proof instrument It can withstand occasional liquid dripping or splashing. It must not be immersed in liquid.
	Electromedical equipment BF type
	Warning: see instructions for use
	Dispose of used electric and electronic devices in an environmentally safe manner, using the appropriate containers and according to any regulations that may apply.

SYRINGE BLISTER PACKAGE ICON TABLE

	Read the instructions
CE 0123	CE mark
	Recycle
	Do not re-use this device
	Pyrogen free
	Protection against moisture
	Do not expose to direct sunlight
	Expiration date
STERILE | EO	Sterilized by Ethylene oxide
PP	Polypropylene
LOT	Lot number
REF	Ref number
NEEDLE	Needle dimensions

A GLOSSARY OF TERMS

Alarm
An alarm is a condition that warrants the user's attention, and is critical enough that it requires that the pump be shut down or reset.
When an alarm occurs, an alarm beep is sounded and a descriptive message appears on the display screen.

Display screen
The pump's liquid crystal display screen is located on the front panel of the pump, providing the information about the functioning of the pump.

Infusion pump for ambulatory use
Pump intended to be carried continuously by the patient.

Infusion set
An infusion set consists of a length of thin plastic tubing with a luer lock connector at one end. At the other end, there is a very small needle that is placed under the skin. The infusion set is connected to the pump and used to deliver drugs, in fluid form, to the body.

Infusion site
The infusion site is the place on the body where the infusion set needle is inserted under the skin.

Luer-lock connector
A luer-lock connector is a special threaded fitting used to connect the infusion set to the syringe.

Occlusion
Occlusion means "blockage". The pump is designed to be able to sense when delivery of the drug is being blocked for some reason. The pump will automatically stop delivering drug and sound an alarm to alert you to clear the occlusion and restart the pump.

Subcutaneous

Subcutaneous means beneath the skin. The infusion set needle is placed subcutaneously.

Syringe pump

Pump intended for controlled infusion of liquids into the patient by a syringe, and in which the delivery time is set by the operator.

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